Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Distribution

From: Matthew R. Strizich, P.E. *MRS*
Materials Engineer

Date: April 29, 2015

Subject: 30-year Pavement Design at Bridge Ends

A memo dated May 24, 2012 mandated the use of the 30-year Pavement Design at Bridge Ends for certain types of projects. Since the inception of this directive, a number of questions have been raised regarding its use particularly on the less invasive projects (pavement preservation). The intent of this memo is to clarify the original memo. There are three options for bridge end treatments:

1. 30-Year Bridge End Treatment: this is intended to alleviate bridge end distress using a 30-year design life of the pavement system.
2. Minor Bridge End Treatment: this is also intended to alleviate bridge end distress and allows for future mill/fill operations.
3. Apply no additional treatment at the bridge end.

Road Reconstruction:

The goal is still to construct 30-year bridge ends on all road reconstruction projects where existing bridges will be reconstructed. Continue to refer to the drawings in the original memo dated May 24, 2012 for a starting point, and consult with Geotechnical and Surfacing Design for project specific design recommendations. In the event an existing bridge within the project limits will not be reconstructed, follow the guidance below for Major Rehabilitation projects.

Bridge Replacement:

The goal is still to construct 30-year bridge ends on all bridge replacement projects. Continue to refer to the drawings in the original memo dated May 24, 2012 for a starting point, and consult with Geotechnical and Surfacing Design for project specific design recommendations.

Major Rehabilitation

Surfacing design will recommend one of the following treatments based on soil survey and/or coring results:

1. Place 0.2 feet of plant mix in addition to the mainline surfacing thickness.
2. Project specific bridge end treatment.

Minor Rehabilitation, Bridge Rehabilitation and Pavement Preservation:

These are the types of projects that generated the most questions with the original memo. With these types of projects consideration needs to be given to the following to determine what (if anything) should be done at the bridge ends:

1. If the roadway within 100 feet of the bridge ends is not showing increased signs of distress compared with the overall project roadway condition, no additional treatment is necessary beyond the standard milled transition.
2. If the roadway within 100 feet of the bridge ends is showing increased signs of distress compared with the overall project roadway condition, mill an additional 0.2 feet (of existing plant mix and/or base course) for the standard 200' transition and replace with new plant mix. This will provide additional structure at the bridge ends and retard distress. This treatment should be referred to as "Minor Bridge End Treatment".

Another point of clarification is the design project manager should request asphalt cores be taken at the bridge ends for stripping analysis and thickness any time coring for OPX2 activity 451 is required.

These changes are effective immediately.

Please contact the surfacing design unit if project conditions dictate consideration of design alternatives or if you have questions regarding this memo.

Copies: Dwane Kailey, PE – Chief Engineer
Kevin Christensen, PE – Construction Engineer
Jim Walther, PE – Preconstruction Engineer
Kent Barnes, PE – Bridge Engineer
Lesly Tribelhorn, PE – Highways Engineer
Damian Krings, PE – Road Design Engineer
Ryan Dahlke, PE – Consultant Design Engineer
Jim Davies, PE – Pavement Analysis Engineer
Jeff Jackson, PE – Geotechnical Engineer
District Administrators
District Preconstruction Engineers
District Project Engineers
District Construction Engineers
Surfacing Design